

Title (en)  
INSULATED GATE BIPOLAR TRANSISTOR

Publication  
**EP 0380249 A3 19901205 (EN)**

Application  
**EP 90300585 A 19900119**

Priority  
GB 8901342 A 19890121

Abstract (en)  
[origin: EP0380249A2] An insulated gate bipolar transistor comprises a body of semiconductor material having four layers of alternate conductivity-type disposed between emitter and collector electrodes (11,18) and an insulated gate (20,22) for establishing charge carrier flow to a base region (12) of the device adjacent the emitter region (10), the device further comprising a conductive path (e.g. 24,28,26) enabling charge carriers to flow from the emitter region (10) to the base region (12) upon turn-off. As a result the device exhibits an improved speed of turn-off.

IPC 1-7  
**H01L 29/72**; **H01L 29/08**

IPC 8 full level  
**H01L 29/68** (2006.01); **H01L 21/74** (2006.01); **H01L 21/8234** (2006.01); **H01L 27/06** (2006.01); **H01L 29/08** (2006.01); **H01L 29/739** (2006.01); **H01L 29/78** (2006.01)

CPC (source: EP US)  
**H01L 29/0834** (2013.01 - EP US); **H01L 29/7395** (2013.01 - EP US)

Citation (search report)  
• [X] EP 0280535 A2 19880831 - TOSHIBA KK [JP]  
• [XP] EP 0338312 A2 19891025 - HITACHI LTD [JP]  
• [X] PATENT ABSTRACTS OF JAPAN, vol. 12, no. 318 (E-650)[3165], 29th August 1988; JP-A-63 81 861 (MITSUBISHI ELECTRIC CORP.) 12-04-1988

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EP0913872A1; US5510634A; EP0450082A4; US5519245A; US6404037B1; WO9116730A1

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**EP 90300585 A 19900119**; GB 8901342 A 19890121; JP 1167390 A 19900120; MY PI19900093 A 19900119; US 46694690 A 19900118